WATER RIGHTS IN THE ARID WEST.

THE great problems of irrigation are not strictly agricultural questions. Agriculture by irrigation has been uniformly successful where the proper method of applying an abundant supply of water has been the only problem for solution. Given a good supply of water, always available, and farming in the arid West is ideal — a climate noted the world over for its healthfulness; crops estimated to be double those raised by rainfall; a full crop every year; and, up to the present and for some time to come, a home market at high prices for everything raised, except fruit in California.

Exact statistics as to the area thus cultivated, or of the area susceptible of irrigation, are not to be had, as neither the states nor the general government have thus far compelled the keeping of any complete records of what has been done, or made full surveys of the lands and measurements of the water. Various estimates of the area susceptible of irrigation have been made, however, by those in positions to know all that can be known at present on this subject. Maj. J. W. Powell, formerly director of the United States Geological Survey, estimated that 150,000 square miles, or 96 million acres, of the land in the arid region could eventually be irrigated.[1] In his testimony before the House Committee on Irrigation, in 1890, Major Powell again estimated the area irrigable from perrennial streams at 100 million acres.[2] To this area was to be added all that could be irrigated from wells, stored storm waters, and any other sources. F. H. Newell, chief hydrographer of the United States Geological Survey, estimates the irrigable area at 74 million acres.[3] The House Committee on Public Lands, in reporting a bill reducing the price of desert lands, in March 1900, gives the area of irrigable public land as 100 million acres.[4] and adds: "At the rate at which desert land has been entered for the last ten years under the desert land law it would take about 500 years to reclaim the irrigable land of the United States." These estimates

[1] *Tenth Annual Report U. S. Geological Survey* (1888–9), Part 2, p. 14.

[2] *Eleventh Annual Report U. S. Geological Survey*, Part 2, p. 204.

[3] *Sixteenth Annual Report U. S. Geological Survey*, p. 494.

[4] *House Report No. 875*, LVI Congress, first session, p. 6.

how that there is public land to the extent of from 75 to 100 million acres, susceptible of irrigation, which can be had for the cost of homesteading, or of entry and reclamation under the desert land laws. Under the latter law the price of public land is $1.25 per acre, and the settler must reclaim the land — that is, provide a means of irrigating it. In the report above referred to the House Committee on Public Lands estimates the average cost of this reclamation at $10 per acre. In addition to the public land there are large areas of railroad and state lands. These railroad lands can be had for from 50 cents to $10 per acre,[1] and state land in Wyoming has an average value of about $1 per acre.[2]

To sum up the present situation, then, in a few words: We have in the arid West some millions of acres of land so farmed as to produce every year crops larger than the best crops raised in the best years in that part of the country where dependence is placed upon rainfall, at least 100 million acres of land susceptible of the same kind of culture, which can be had at prices ranging from 50 cents to $10 per acre, and which in its present condition yields an income ranging from nothing to 5 cents per acre per year, and which is being taken up at such a rate that 500 years will hardly see it reclaimed.

Looking at these condition, the most natural question is, What is the matter?

As was said above, wherever the only question is how to use an abundant supply of water, always available, irrigated agriculture has been successful. There are degrees in this success, and there is room for much improvement along the line of raising more remunerative crops, of economy in the distribution of water, and in other directions, but those things come naturally with development, and are not a hindrance to further progress, but rather invite investment.

The great hindrances to the spread of agriculture by irrigation in the West may be brought together under two heads: The failure of capital and labor to get together on some just basis, and the unsettled condition of titles to water.

We say the failure of capital and labor to get together, for the reason that a settler with nothing but his own labor and that of his team cannot make a home for himself in the arid West. Conditions

[1] See *Advertising Circulars of the Union Pacific Railroad Company*, Omaha, 1899.

[2] See *Report of the Register of State Board of Land Commissioners*, Wyoming, 1897–8.

differ widely from those which existed in the great central West when it was settled under the homestead law. Then all that was necessary was to break the sod and plant crops, and a settler coming to the land could, almost from the start, support himself and family. It required almost no capital but a team and a few implements. When farming began in the arid region it required very little more capital than in the central West, because the pioneers took up the level bottom lands, where each farmer or a few neighbors could in a short time with their own labor build the ditches necessary to water the land. But the areas which could be reclaimed in this way are naturally limited, and were soon taken up. The larger part of the land now reclaimed, and most of that which will be in the future, lies back from the streams where neither the individual settler nor a few neighbors working together can come in and build their ditches and begin at once to support themselves. Large outlays of labor and capital are necessary before any crops can be raised. For this reason the arid West cannot be settled, as was the middle West, by an army of poor men. The capitalist must go with the settler or precede him, and build the ditch, and keep the settler while the land is being brought into condition for cultivation, and give him time to pay for his rights in the ditch.

While individuals and small co-operative companies have in the past reclaimed much land, they do not enter into the consideration of the future of irrigation, for the reasons just stated.

The large canals of the present have been built by corporations organized for the purpose of dealing in water. Some of them united with this a speculation in land, by buying the land under their ditches and selling land and water rights together. Such corporations have reclaimed large areas, but have almost invariably been financial failures. This failure has been so notorious that the statement is frequently made that not one such ditch company in the United States has been a financial success. While such an extreme statement may not be true, the fact that such corporations have generally failed goes undisputed.

The immediate cause of these failures has in most cases been the inability to secure enough settlers upon the lands which the canals are built to water. The fundamental cause of the failure to get settlers is the water-right system. Water rights are of two kinds, those obtained by appropriating water direct from streams, and those obtained from a corporation by purchase, the corporation holding the direct right from

the stream. The two classes of rights differ essentially in one particular. The appropriator from the stream obtains a right to take a certain quantity of water from the stream whenever he needs it, provided it is in the stream — that is, he obtains a right to water. The purchaser of a water right from a ditch company gets a right to receive water from the company by paying for it — that is, he can get no water on his water right until he has not only paid for the water he is to receive, but has in addition paid for the right to pay for the water. This is shown by the following extract taken from a contract used by a Wyoming canal company:

Witnesseth: That the said party of the first part, for and in consideration of the sum of.....dollars, paid to the party of the first part by the party of the second part, ... does sell . . . . unto the said party of the second part, ... heirs, executors and assigns, the right to have, receive and use water from the canal of the said party of the first part for the purpose of irrigating the following described land . . . .

And it is further agreed by and between the parties hereto, that before the party of the second part shall have the right to demand or receive water for irrigating said land, under this agreement, from the canal of the party of the first part, said party of the second part shall make and execute a further agreement with said party of the first part, for the use of said water . . . . , which last mentioned agreement shall, among other things, provide for the payment of an annual water rate to be fixed by the party of the first part.

Not only must the farmer pay for the right to receive water, and then pay for the water, but he must pay whether he gets the water or not. There is a substantial agreement in nearly all water-right contracts in this regard, so that the following, taken from a Nebraska contract, may be considered typical. After the usual paragraphs stating that the canal company, for a certain consideration, sells to the purchaser certain water rights, and providing for deferred payments on the purchase price and for annual assessment, comes the following:

It is hereby distinctly understood and agreed by and between the parties hereto, that in case the canal of said company shall be unable to carry and distribute a volume of water equal to its estimated capacity, either from casual or unforeseen or unavoidable accident, or if the volume of water prove insufficient from drouth, or from other cause beyond the control of said company, the company shall not be liable in any way for the shortness or deficiency of supply occasioned by any of said causes.

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And the said second party, in consideration of the promises, hereby agrees that . . . . will make punctual payment of the above sums, as each of the

same respectively becomes due, and that . . . . will regularly and seasonably pay all assessments that may hereafter be imposed by said company for the purposes aforesaid. And it is hereby agreed and covenanted by the parties hereto, that time and punctuality are material and essential ingredients of this contract. And in case the second party shall fail to make the payments aforesaid, and each of them punctually and upon the strict terms and times above limited, and likewise to perform and complete all and each of said agreements and stipulations aforesaid, strictly and literally without any failure or default, then this contract, so far as it may bind said first party, shall become utterly null and void, and all rights and interests hereby created or then existing in favor of the second party shall utterly cease and determine, and all equitable and legal interest in the water rights hereby contracted to be conveyed shall revert to and revest in said first party, without any declaration of forfeiture, or any other act of said first party to be performed, and without any right of said second party of reclamation or compensation for moneys paid, or services performed, as absolutely, fully and perfectly as if this contract had never been made.

That is, if from any cause beyond its control, the canal company fails to furnish the water contracted for, it loses nothing; but if from the same cause, indirectly, and directly through the failure of the canal, the farmer fails to make his payments "punctually and upon the strict terms and times above limited," he loses all he has paid, no matter if it is the final payment on his water right which he fails to pay on time.

It will probably be said that "capital is shy," and must have assurance of a regular return on the money invested, but the event has proved that in this case labor is equally "shy," and with good reason.

A modification of this system which has met with some success, does away with the old water rights and sells in their place shares of stock in the ditch company, so that the canal will ultimately be owned by those using the water; but there has been no general adoption of this system.

The laws of Idaho (laws of 1899) prohibit the selling of water rights and provide that water companies shall furnish water to anyone applying for it, giving preference to those having used water from the canal before. This would put canal companies on much the same footing as city water companies. It is doubtful whether this will succeed, for the reason that neither the canal company nor the farmer is bound in any way for any term of years, and there is not sufficient guaranty for the future to justify the company in building a canal or the farmer in preparing his land for irrigation.

Another method of uniting capital and labor, which was hailed as the solution of all the difficulties standing in the way of irrigation development, is the organization of irrigation districts. This system had its birth in California in 1887, with the passage of the famous Wright law. Under the Wright law the people of a locality capable of being watered from a common source of supply could organize themselves into an irrigation district, and issue bonds which were to be a lien upon the real property of the district. The essential feature of the system was that not merely the property of those wishing to organize the district and to use the water supply when provided was taxed to pay the bonds, but all the property in the district, unless it was excepted through certain forms provided in the law.

This law was made use of to unload undesirable property upon people having no direct interest in irrigation; bonds were sold, and then the attempt was made to repudiate them, until the system came into such disrepute that districts could find no market for their bonds, and the irrigation district system has proved a failure so far as reclaiming any considerable area of land is concerned not only in California[1] but elsewhere.

The weak points in the district system seem to be the possibility of abuse, in including property in the district which is not benefited by the works of the district, and the inability of districts to sell their bonds. If no property is included but that directly benefited, an ordinary incorporation of those forming the district will serve as well as a district organization, and will be less expensive. The whole purpose of the district is to obtain money to build irrigation works, and no matter how perfect the system may be, theoretically, if it fails in this one point it is a total failure.

A study of the half century of irrigation development in arid America shows that some co-operative companies have succeeded, some few corporations have been financial successes, and a few districts have been successful; but the fact remains that up to the present time no generally successful system of uniting capital and labor in large irrigation enterprises has been worked out.

The second and the greatest hindrance to further development of irrigated agriculture is the unsettled condition of titles to water. The general principles upon which water titles are based are well settled.

[1] *Inaugural Address of Governor Gage*, January 4, 1899.

Titles to water from the streams of the arid region are acquired by appropriation, and priority in time of appropriation gives priority of right, and the water appropriated must be put to a beneficial use.

That is, the way to acquire the right to take water from a stream, is to take it and use it; and if at any time there is not enough water in the stream to supply all those wishing to use it, they shall be supplied in the order in which they first used water from that source.

But the general principles are the only things about water titles which are well settled. The application of the principle of prior appropriation is anything but settled. Many streams flow through the territory of more than one state. Each state has granted rights to the water of such streams regardless of the rights of prior users farther down on the same stream in another state. The United States courts have decided[1] that this should not be done, and that an appropriation in one state was good as against a subsequent user above in another state. Notwithstanding this decision the supreme court of Colorado recently decided[2] that in adjudicating rights to water Colorado courts cannot take into consideration any diversion of water for use in New Mexico, even though the diversion is in Colorado.

During the last year the state of Kansas has begun suit in the United States Supreme Court against the state of Colorado, charging that the Arkansas River was being diverted in Colorado to the injury of Kansas farmers.

These citations are sufficient to show the situation regarding rights on interstate streams. Within the states the same condition prevails between water districts. Most of the states are divided into water districts, for purposes of administration. Many streams are in more than one district, and often a main stream is in one district and some of its tributaries are in another. Sometimes rights in these districts are adjudicated entirely independent of rights on the same stream in another district, or of rights on the main stream or on the tributaries, as the case may be. In other cases it is held that streams must be adjudicated as a whole, so that the policy within the state is not settled.

Most of the arid states have prescribed certain rules for filing claims to water, and for constructing works with "reasonable diligence," etc., but so far no penalties have attached to failure to file claims, and

[1] *Howell* vs. *Johnston*, 89 *Federal Reporter*, 556.

[2] *Lamson* vs. *Vailes*, 61 *Pacific Reporter*, 231.

"reasonable diligence" is open to such divergent constructions that these laws have been little but an invitation to litigation.

In all the arid states, except Nebraska and Wyoming, the whole administration of the water supply has been left to the courts. There is no simple process by which an irrigator can prove up his claim to water as he can his claim to government land, but he must go into the courts, hire an attorney, secure witnesses to testify to his acts, and go through all the forms of a suit at law. The decrees rendered in these cases are subject to review, and cover only the claims of the parties to the suits. Parties not included in the adjudications can at any time open up the question, and as the decrees formerly rendered only define the rights of the parties to them as against each other, every appropriator on a stream must appear every time a case comes up on his stream and defend his rights, or rights subsequent to his may be given a preference over his.

The holding of different theories in regard to appropriations, and as to filing claims, and as to what constitutes reasonable diligence, and the practice of leaving the whole matter of water rights to the courts, result in unending litigation. It is impossible to give statistics in regard to the extent of this litigation or as to its cost, as the records of the lower courts in the several states are not published, and the largest part of the expense of litigation is not a matter of record, except on the books of the lawyers and of the irrigators. The following, taken from a petition sent to the Department of Agriculture by citizens of California, will give some idea of the conditions in that state:

> We can offer, we presume, examples of every form of evil which can be found in Anglo-Saxon dealings with water in arid and semi-arid districts. Great sums have been lost in irrigation enterprises. Still greater sums are endangered. Water titles are uncertain. The litigation is appalling.

This petition was signed by such men as President Jordan, of Stanford University, and E. J. Wickson, acting director of the California Experiment Station.

The cost of litigation of water rights in Colorado has been variously estimated at from one million dollars to ten million dollars. That state has been described as a place where "every irrigator must retain an attorney and buy a shotgun to protect his right." The following, taken from the *Rocky Mountain News* of July 7, 1900, shows something of the condition in Colorado:

There is impending in the Arkansas valley, and probably in other parts of the state, a great clash among the owners of ditch rights because the practice of district judges in adjudication of water rights is not uniform. It is the custom, it is said, for district judges in all the counties except Pueblo and Las Animas, and the other counties constituting the two districts with them, to reopen the matter of adjudications on the slightest provocation. Not infrequently owners of adjudicated priorities of a fixed date find proceedings entered upon and carried through, the result of which is that their priorities are virtually pushed into a later year by the insertion ahead of them of rights claimed by ditch owners who were not parties to the full adjudication. . . . .

The result of the practice in a greater part of the state is to keep the water priorities always an open book, and no settlement possible for all time, with the result that a deal of trouble is coming, according to the view of all water-right attorneys.

The writer recently asked a Colorado water lawyer whether, in his opinion, litigation over water rights was decreasing. He answered that it was not, but was increasing if anything; and his practice is in a district where the rights were supposedly *finally* adjudicated seventeen years ago.

The following is the statement of expenses of a Montana ditch company for the years 1891 to 1895. The amounts given in the original statement have been reduced to percentages of the whole:

	Per cent.
Services of attorneys	60.1
Court fees	19.0
Canal maintenance and repairs	14.0
Miscellaneous expenses	6.9

The statement shows this company paid four times as much for legal expenses as it did for maintaining and operating its canal. And such a state of things is not exceptional.

In Wyoming and Nebraska water titles are not settled in the courts, but by boards created for the purpose of distributing the water supply of those states. Under this system the board gives notice that at a certain time it will hear testimony as to the use of water from a certain stream. When the testimony is in the board decides as to the date of each appropriation and the quantity of water to which each claimant is entitled, and issues a certificate to each irrigator stating the number of his priority and the quantity of water to which he is entitled. Persons wishing to appropriate water from a stream subsequent to the adjudication by the board of control must apply to the president of

the board for permission to do so, and if there is unappropriated water in the stream, he is given permission to build a ditch and use the water, and upon submitting proof of having done this, he is given a certificate showing just what his rights are.

This law has been in force in Wyoming for ten years, and during that time but two water-right suits have reached the supreme court. But the supreme court of the state has recently overturned the whole system by deciding that no one is obliged to submit his claims to the board of control, and in case anyone does not do so, he may enforce his rights in the courts. This places Wyoming rights in the same position as those in the other states where the courts have the control of the whole matter of dividing water among the various claimants.[1]

With water titles in such hopeless confusion, and with no hope of any permanent settlement, neither capitalists nor farmers can be expected to flock to the arid West and reclaim the desert.

As to remedies for the prevailing evils: The Wyoming law has worked to the satisfaction of all concerned for ten years, and during that time there has been no more litigation than is necessarily incident to any business. The defect in the law, as pointed out by the state supreme court in the decision above referred to, is that the board of control cannot compel water users to submit their claims to it for adjudication. But in the same decision the court intimates that it would be competent for the legislature to pass a law making the penalty for failure to submit claims to the board the forfeiture of all rights. The Wyoming system, with this addition, provides for an inexpensive proceeding before an expert board, paid by the state, and after a limited time for review its decision is final, and the irrigator is given a certificate showing just what his rights are, and these rights are as much a matter of record as is his title to land, and are no more liable to attack.

In many of the arid states the adoption of such a system would necessitate changes in their constitutions, but the benefits to be derived from its adoption would be well worth the trouble of making constitutional amendments.

Rights on interstate streams might be adjusted by an interstate board constituted like these state boards, or the dates and amounts of appropriations might be determined by the board in the state in which they were made, and be administered by a national or interstate

[1] *Farm Investment Co.* vs. *Carpenter*, 61 *Pacific Reporter*, 258.

official. There is no question but that justice demands that state lines be entirely disregarded on such streams. There is no more reason that a settler just above a state line should be allowed to rob his neighbor just below the line of his water than that he should be allowed to take his horses or his farm implements. With an inexpensive and final method of settling titles to water, capital and labor would doubtless find some mutually advantageous mode of combination, and the vast resources of the arid West would be developed.

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